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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/472,818	12/28/1999	KIYOHICO YAMAYA	TESJ.0014	9250
38327	7590	08/12/2005	EXAMINER	
REED SMITH LLP 3110 FAIRVIEW PARK DRIVE, SUITE 1400 FALLS CHURCH, VA 22042			GRAHAM, ANDREW R	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/472,818	<b>Applicant(s)</b> YAMAYA, KIYOHICO	
	<b>Examiner</b> Andrew Graham	<b>Art Unit</b> 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-10 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-10 and 13-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The amendments made to Claim 9 in view of the previous rejections under 35 U.S.C. are approved and have been entered into the case. Accordingly, the previous rejection of these claims under 35 U.S.C. 112 is hereby withdrawn.

***Claim Objections***

2. The amendments made to Claim 1 in view of the previous objections to claims 13 and 14 are approved and have been entered into the case. Accordingly, the previous objection to these claims is hereby withdrawn.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-3, 5-10, and 13-15 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-2, 5-6, 10, and 13-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Jennings et al (USPN 4058045).

Hereafter, "Jennings et al" will be referred to as "Jennings".

Jennings discloses a piano with a sound enhancing system that utilizes a piezoelectric pickup.

Specifically regarding **Claim 1**, Jennings discloses:

(Currently amended) A pickup apparatus (20) of a piano (10) having a stationary member (12) and a sound source member (13) which vibrates according to a sound of the piano (col. 2, lines 32-47), comprising:

a sensor (21) for detecting a vibration of said sound source member (13) (col. 3, lines 1-16) and

a sensor holding member (comprising holder 22,32,34,35, or 64,66,65,67; col. 3, lines 23-40; col. 4, lines 38-50; Figures 3 and 5)

which contacts said stationary member (12 by face 36) and said sound source member (13) and keeps (holds substantially stationary) said sensor (21) between said stationary member (12) and said sound source member (13) (col. 3, lines 26-36)

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wherein said sensor holding member (comprising 22,32,34,35, or 64,65,67) has a length adjusting mechanism (spring 35 or 67) for adjusting a length of said sensor holding member (length of overall assembly, as affected by spring compression and expansion) according to a distance between said stationary member (12) and said sound source member (13) (spring size is influenced by spacing between 12 and 13, col. 3, lines 30-32);

and said sensor (21) is forcibly supported (spring 35 forces assembly firmly against 13, col. 3, lines 30-32) and held between said stationary member (12) and said sound source member (13), upon adjustment of said length adjusting mechanism (spring compression, based on tension of spring is implicit source of force from spring; thus, placement of assembly 20 between 12 and 13 as shown in Figures 1-3, reads on 'upon adjustment')

so that a first side end (face of 35) of said sensor holding member (comprising 22,32,34,35) contacts a stationary member side (36 of 12) and a second side end connects a sound source member side (contacts 13) (col. 3, lines 26-36).

Regarding **Claim 2**, Jennings discloses:

wherein said first side end has an angle-adjusting mechanism (comprising end coil and at least one adjacent non-end coil of spring 35) contacting said stationary member (12) at an arbitrary angle (implicit in nature of coil that end applied to 12 will flex in response to contact with 12 at arbitrary angle; col. 3, lines 26-30; Figure 3).

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Regarding **Claim 5**, Jennings discloses:

wherein said second side end (end with 65 interpreting sensor holding member to comprise 64,65,67) are in contact with said sound source member (13) through at least one mounting (front plate 66, col. 4, lines 43-47)

Regarding **Claim 6**, Jennings teaches the use of piezoelectric means (61) which reads on "piezoelectric force pickup means" (col. 4, lines 39-41 OF Jennings).

Regarding **Claim 10**, Jennings teaches:

second side end (end with 22 interpreting the holder assembly to comprise 22,32,34,35) contacts said sound source member (13 sound "board", which is implicitly wooden in context of Jennings) through a contacting trace (indentation or deformation) (22 held with force to 13, implicit deformation of 13 from pressure of 22 teaches on 'trace').

Regarding **Claim 13**, Jennings teaches 12 to be an upright or post, which reads on "brace" or "a back post of a vertical piano" (col. 2, lines 45-47; col. 4, lines 47-48)

Regarding **Claim 14**, Jennings discloses (13) to be a sounding board, which reads on "a sound board" (col. 2, lines 43-45)

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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6. **Claims 3 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jennings as applied above, and in further view of Kitashima (USPN 6087574).

As detailed above, Jennings discloses the use of a piezoelectric sensor to obtain sound waves from the sound board of a piano. The piezoelectric crystal of Jennings is disclosed as having connected leads (30,31), the signal carried upon which is applied to internal speakers (col. 3, lines 41-65).

Specifically regarding Claim 3, Jennings does not specify:

- said sensor member includes at least one detachable electric signal output connector.

Kitashima teaches an upright piano that includes internal speakers.

Regarding Claim 3, Kitashima also discloses the existence of a headphone jack (5d) on the control panel (5c) (col. 9, lines 2-5). Such a jack and the implicitly attached headphone connector for use, in view of the manner in which the signals are obtained in the system of Jennings reads on "said sensor member includes at least one detachable electric signal output connector".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to incorporate a headphone jack as disclosed by Kitashima, as part of the output circuitry of the piezoelectric sensor of the system of Jennings. The motivation behind such a modification would have been that such a headphone jack would have enabled a set of headphones to be attached to the system, stopping the output of the internal speakers, which would have enabled

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the piano user to listen to the audio at a desired level without disturbing others.

Regarding **Claim 15**, please refer to the like teachings of Claim 3.

7. **Claims 7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jennings as applied above, and further in view of Pozar (USPN 4242937).

As detailed above, Jennings discloses the use of a piezoelectric sensor to obtain sound waves from the sound board of a piano.

In terms of the specifics in which the pick-up device is secured to the piano, Jennings does not specify:

- the length adjusting mechanism comprises:

- a screw portion; and

- a main arm member threadedly engaged with said screw portion.

Pozar discloses a pickup support system for adjustably positioning a pickup in both of two orthogonal directions.

Regarding **Claim 7**, Pozar discloses:

the length adjusting mechanism (mount assembly comprising components of Figure 4) comprises:

- a screw portion (25; col. 3, lines 45-48); and

- a main arm member (comprising 28,42) threadedly engaged with said screw portion (25) (col. 3, lines 41-44; col. 4, lines 31-42).



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To one of ordinary skill in the art at the time the invention was made, it would have been obvious to utilize the bolt and arm support system of Pozar to support the pickup relative to the sound board in the system of Jennings. The motivation behind such a modification would have been that such a system would have enabled the pickup of Jennings to be positioned adjustably closer to the sound board as well as repositioned in directions lateral to the sound board surface. The reference of Clark (USPN 5134920) has been provided herein support the notion that magnetic and piezo-ceramic transducers are known in the art to be analogous components in a sound pickup system, as are diaphragms.

Regarding **Claim 8**, Pozar teaches:

first side end (side opposite diaphragm, in view of side toward 12 in Jennings) comprises said main arm member (28) in contact with a plurality of bar like sub arms (29) (col. 4, lines 21-24 of Pozar),

each sub arm (29) mounted at a first end (contacting ends) to said main arm member (28) (col. 4, lines 20-26)

and a second end (turned ends 38,39) of each sub arm (29) is in contact with said stationary member of a piano body (housing of Pozar in view of support posts 12 of Jennings; col. 4, lines 27-30).

Regarding **Claim 9**, Pozar teaches that one end (38,39) of the support pieces is turned upward, which reads on "each of the plurality of bar like sub arms is provided at the second end with a projecting contact portion" (col. 4, lines 5-22). Alternatively, the bolts (32) may be interpreted as "a projecting contact portion" (Figure 2)

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**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Clark (USPN 5134920) discloses a an adjustable pickup mounting system that may be used with a variety of percussion instruments.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Graham whose telephone number is 571-272-7517. The examiner can normally be reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew Graham

Examiner  
A.U. 2644

ag  
August 2, 2005

  
VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600